

# BULLS EYE 2020



## AFTERMARKET

APR 2020

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## SPECIAL NOTICE

### COVID-19

# COVID-19

Dear Meritor Customer,

We would like to pass on our sincere best wishes to all customers affected by the COVID-19 pandemic and hope you and your loved ones are safe and well.

We would also like to inform all customers that our aftermarket warehouse in Derrimut continues to remain open for business and our office support staff, although working remotely, are continuing to support all customer needs. Our field based staff, while restricted from visiting customers in person, also remain contactable via phone and email.

Throughout the crisis Meritor will continue to take both recommended and proactive actions to protect the health of our employees, families and the broader community. Although conditions continue to evolve and further actions may be necessary we would like to assure all customers that we will continue to do our best to service their needs.

We ask for your patience and understanding and will continue to keep you informed should our circumstances change.

Yours sincerely,

Meritor Australia Aftermarket



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## PRODUCT IN FOCUS MXL SERIES UNIVERSAL JOINTS

### Meritor universal joint

components have been linking transmissions and drive axles for trouble-free driving for decades and continue to innovate with 100-plus years of driveline technology development experience.

Only Meritor universal joints offer the below features and benefits you should consider when choosing driveline components for your vehicle.



FEATURE	BENEFITS	MERITOR	COMP. A
Nylon Thrust Washer	Eliminates metal to metal contact, reducing wear and extending life.	✓	✗
Advanced Triple Lip Seal	Superior sealing characteristics with triple-lip seal and protective metal deflector. This keeps lubrication in and contaminants out.	✓	✗
Superior Long Bearing Pack	Larger contact surface (20% more than competitors) and a robust bearing retention system provides superior damping force and eliminates spinning cups.	✓	✗
Extended Lube Intervals	Meritor MXL lube intervals are 3x longer than competitors. This saves you or your business in lubrication and service costs.	✓	✗



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## PRODUCT IN FOCUS MXL SERIES UNIVERSAL JOINTS

### QUALITY COMPONENTS



#### Meritor MXL Universal Joint



*High Quality Finish*

*Made in dedicated Meritor factory*



#### Competitor A Universal Joint



*Rough Quality Finish*

*Origin of manufacturer unknown*

#### Meritor MXL Trunion



*38 Long Bearings*

*Nylon Thrust Washer*



#### Competitor A Trunion



*33 Bearings*

*No Nylon Washer*

#### Meritor MXL Triple Lip



*Triple Lip Sealing System*



#### Competitor A Single Lip



*Single Lip Seal*

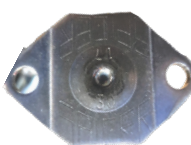
#### Meritor MXL Cap weld



*Full circular solid weld on plate*



#### Competitor A Cap weld



*Centre Spot weld on plate*

Find out more



# BULLS EYE 2020



## TECH TIPS

### HOW TO ANALYZE CONTAMINANTS ON MAGNETIC DRAIN AND FILL PLUGS

Today's TECH TIP is about how to analyze contaminants on magnetic drain and fill plugs.

#### Remove and Inspect the Magnetic Fill/ Drain Plug

Remove the magnetic fill/drain plug. Inspect the metal particles adhering to the plug. Use the Guidelines in this technical bulletin to determine if the metal particles you find are fine (a normal condition) or larger (a condition that is not normal).

#### Guidelines

##### Fine Metal Particles

The fine metal particles attached to the magnetic plug in Figure 1 are normal. Internal components can shed fine metal wear particles at a steady rate, especially during the break-in period. In addition to the magnetic plugs, Meritor axles are also equipped with four to six magnets in the housing to capture debris generated during extended maintenance intervals used today.



Figure 1



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## TECH TIPS

### HOW TO ANALYZE CONTAMINANTS ON MAGNETIC DRAIN AND FILL PLUGS

#### Guidelines

##### Thrust Washer Fragments

Figure 2 shows a main differential side gear thrust washer fragment. The loss of a fragment from the thrust washer is not detrimental to the operation of the axle and does not require disassembly, inspection and replacement of the axle. If you are concerned about additional fragments or component damage, perform an oil sample analysis. If the iron content of the sample is above 1000 parts per million (ppm), inspect and repair the carrier as necessary.

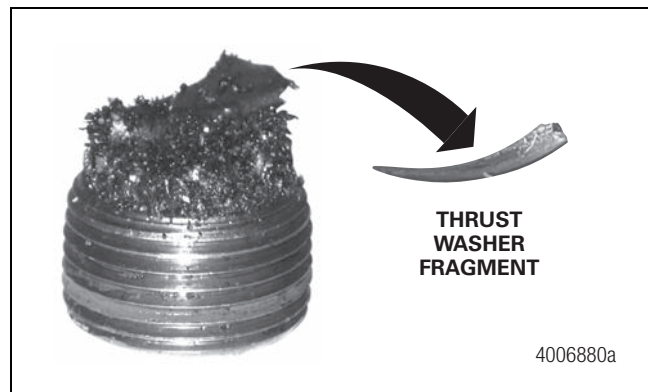


Figure 2

##### Metal Shavings

Figure 3 shows metal shavings which are remnants from the housing machining process. Metal shavings adhere to the magnets and are not detrimental to the operation of the axle. It is not necessary to perform further inspections or remove the carrier for cleaning.



Figure 3



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## TECH TIPS

### HOW TO ANALYZE CONTAMINANTS ON MAGNETIC DRAIN AND FILL PLUGS

#### Guidelines

#### Bearing and Gear Tooth Fragments

Figure 4 and Figure 5 show bearing and gear tooth fragments. Both indicate a significant issue that can result in component damage. Immediately remove the carrier, inspect it, and perform required repairs.



Figure 4

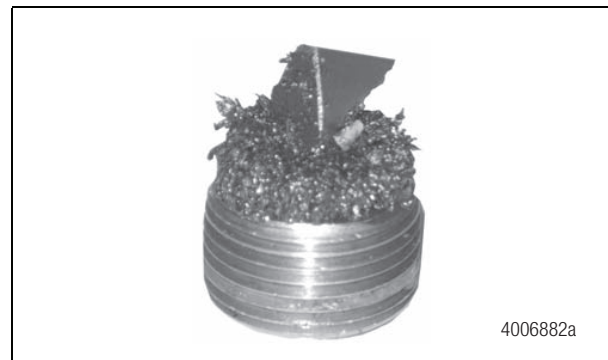


Figure 5

#### Verify the Lubricant Level is Even With the Bottom of the Fill Plug Hole

Verify that the lubricant is even with the bottom of the fill plug hole and not below the fill plug hole. If necessary, add the specified lubricant, until it is even with the bottom of the fill plug hole. Figure 6.

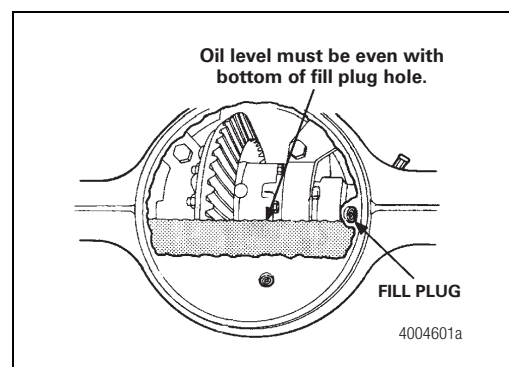


Figure 6



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## TECH TIPS

### HOW TO ANALYZE CONTAMINANTS ON MAGNETIC DRAIN AND FILL PLUGS

#### Guidelines

#### Check the Condition of the Oil

Most drive axle oils are either golden brown or deep red in color. If the oil looks “milky brown” or has a “copper” color, the oil is contaminated. The oil samples in Figure 7 show how the lubricant may appear during inspection. Refer to Oil Conditions for guidelines.

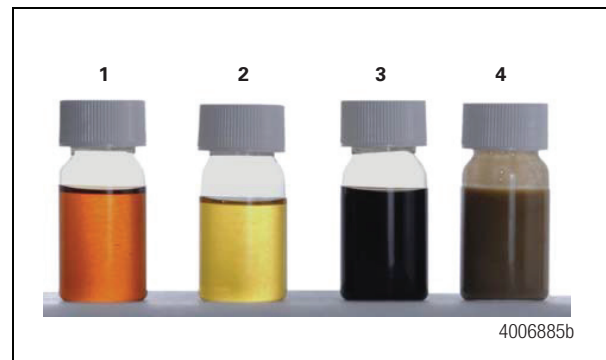


Figure 7

#### Oil Conditions

##### Sample 1: Red

##### Sample 2: Golden Brown

Both the red and golden brown samples show the typical appearance of new GL5 EP oils that meet the SAE J2360 specification. They usually are golden brown, but also can be red in color. Figure 7.

##### Sample 3: Black

This black sample is used-oil with significant time and mileage. The color change from red or golden brown to black is the result of a normal chemical process that occurs as the additive package in the oil degrades. The black color does not necessarily indicate that the oil’s useful life has been exhausted. Perform a lubrication analysis to verify that the oil can still be used in the carrier. Figure 7.

##### Sample 4: “Milky” Brown

This “milky” brown sample indicates the oil is contaminated with significant moisture well above



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### HOW TO ANALYZE CONTAMINANTS ON MAGNETIC DRAIN AND FILL PLUGS

the allowable change specification of  $>0.3\%$ . Change the oil immediately. Locate the source of the moisture. Figure 7.

#### Copper (Sample Not Shown)

A copper color indicates that the drive helical support thrust washer may have disintegrated. Use care when you evaluate the oil, as a copper color can be confused with the normal color of some oils. Perform a lubrication analysis to determine the amount of copper in the lubricant before you perform a physical inspection. If the copper level is above 600 ppm: Remove the input shaft assembly and inspect the drive helical support thrust washer. If the copper level is 600 ppm or below: You can continue to use the oil.

Table A: Used-Oil Analyses (ppm = parts per million)

Iron (Fe)	If the level is 1000-1500 ppm, resample the oil. If resampling indicates that the iron level is above 1000 ppm, drain and replace the oil. If the level is above 1500 ppm, drain and replace the oil.
Silicon (Si)	If the level is greater than 100 ppm, drain and replace the oil.
Water (H <sub>2</sub> O)	If the level is greater than 0.3%, drain and replace the oil.
Phosphorus (P)	If the level is less than 900 ppm, it is possible that the oil is not a GL-5 gear oil. Contact the lubricant manufacturer or Meritor Materials Engineering to determine the expected phosphorus level of a new oil sample. Only GL-5 type gear oils are approved for use in Meritor differentials.
Toluene Insolubles	If the level is greater than 0.100 wt.%, drain and replace the oil.

[DOWNLOAD THE TECH TIPS PDF HERE](#)



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## RUN WITH MERITOR

### IVAN CASSAR

#### CELEBRATING MERITOR'S 50

In our 50th year of producing axles in Australia we'd like to take some time to acknowledge some of the employees who have made a significant contribution to our success over the years. This month we'd like to recognise Ivan Cassar. Ivan has been with Meritor for over 23 years. He was only 17 years old and had just completed VCE, when he first started work with us in January 1997 as a trainee parts interpreter. Ivan's interest in and love of all things mechanical; from trucks to bikes to cars first sparked his interest in this role. The year Ivan started with us also happened to be the year Crown Casino opened in Melbourne, Dolly the sheep was cloned and Titanic became the highest grossing film in history. It was also the year that our company changed its name from Rockwell Standard of Australia to Meritor Heavy Vehicle Systems Australia.

The majority of Ivan's 23 years with Meritor have been spent in our aftermarket division. Following his start as a trainee parts interpreter he moved on to senior parts interpreter, aftermarket field sales representative and then export sales manager for ASEAN nations. Ivan was ideally suited to developing the export markets. His encyclopaedic knowledge of all Meritor parts and the trucks and applications they are used in saw him help to develop our business in markets as diverse as Vietnam, Korea and Indonesia. Over the years many customers abroad as well as many Meritor staff internally have relied upon his knowledge for answering the trickiest



of parts related questions. The pleasure that Ivan gets in solving customer problems and learning new things is evident still today. If he's not at his desk he can often be found wandering the parts warehouse ensuring that parts his customers may need do not end up in the scrap bin. From mine sites, to ports, to army bases Ivan is probably Meritor Australia's most travelled employee. Ivan puts the company's success over the years down to this customer focus and it's ability to adapt to the market by releasing products that offer reliable solutions for customers.

Now, with a young family and a busy home life, Ivan has hung up the frequent flyer card to take up a position closer to home, recently moving over from our aftermarket division to the truck side of the business as a Truck territory manager in Australia. In this position he is charged with growing the share



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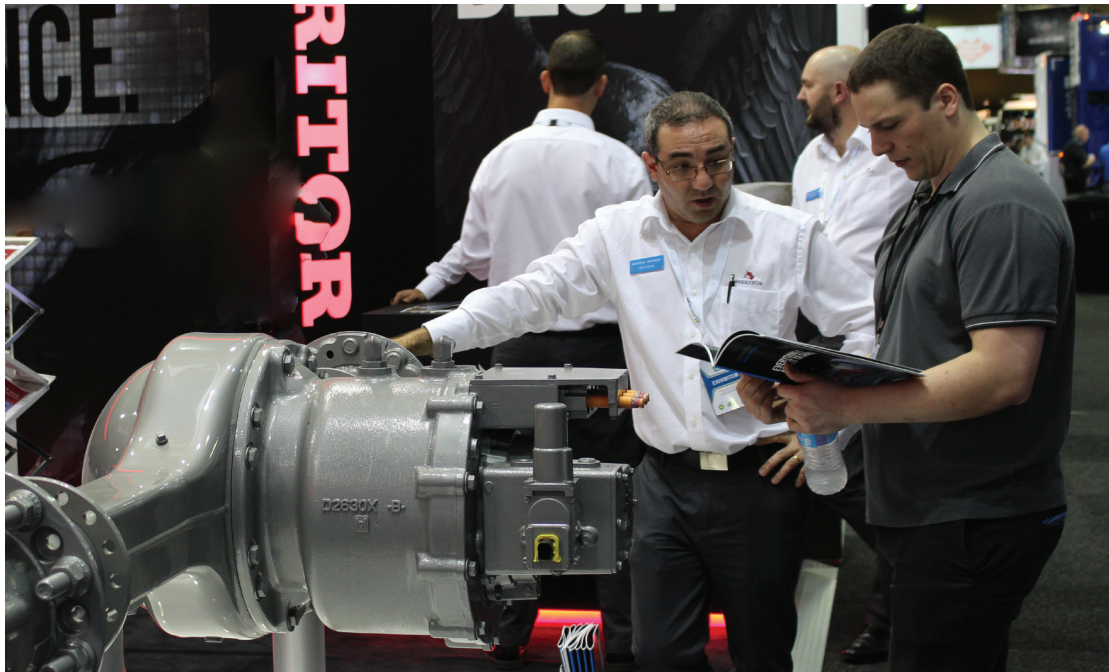
## RUN WITH MERITOR

**IVAN CASSAR**

### CELEBRATING MERITOR'S 50

of Meritor axles fitted to Australian trucks with fleets, dealers and owner operators. There's no doubt the adage remains that a salesman may sell the first axle to a customer but it's the service and support which sells the next one and the one after that. No one in the organisation is better equipped than Ivan to deliver that support to customers so we wish him all the very best with the new role.

With luck Ivan may also now find time to pursue some interests outside of work including finally re-starting his motor cross bike that has been gathering dust in the garage and attending weekend soccer with the family. On behalf of Meritor Australia, many thanks for your dedication and work over the years Ivan and best of luck for the future.



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